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The value relevance of 'realistic reporting': evidence from UK life insurers

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The value relevance of 'realistic reporting': evidence from UK life insurers

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Abstract—Even under the International Financial Reporting Standard 4 (IFRS 4), the current accounting regime for UK life insurance companies is oriented towards delaying the recognition and distribution of profit, and still remains largely rooted in traditional requirements for statutory solvency reporting. This paper tests empirically the value relevance of the alternative 'realistic reporting regime' of voluntary embedded value (EV) disclosures that has been generally adopted by leading UK and Continental European insurers. In recent years, EVs have also been used internally (but not disclosed) by many US life insurers. The results found here are consistent with value relevance and some implications for standard-setters are explored.

Key words: Embedded value, life insurance, value relevance.

'Although there seems to be considerable support for the view that reliability should be the dominant quality in the information conveyed in the financial statements, even at the expense of relevance, while the opposite is true of information conveyed outside the financial statements, that view has in it the seeds of danger.....If it were carried to its logical conclusion...the end would be that most really useful information provided by financial statement reporting would be conveyed outside the financial statements, while the audited financial statements would increasingly convey highly reliable but largely irrelevant, and thus useless, information.' (FASB 1980, para. 44, quoted by L. Todd Johnson in 'Relevance and Reliability', the FASB Report, No.265, 28 February 2005.)

1. Introduction

Despite the implementation of the new International Financial Reporting Standard IFRS 4 *Insurance Contracts* on insurance reporting (IASB, 2004), the current accounting regime for UK life insurance companies is still oriented towards delaying the recognition and distribution of profit and remains largely rooted in requirements for statutory solvency reporting. A number of pressures, external as well as internal, have caused a major re-evaluation of this statutory approach and as a result life insurance accounting has been undergoing a revolution during the past two decades, both in the UK and internationally. One striking feature of these developments has been the emergence around the world (in particular in the UK and in 'old-Commonwealth' countries such as Australia, Canada, New Zealand and South Africa) of alternative reporting bases that aim to improve conventional life insurance reporting by introducing 'value-based' approaches. Within the UK, the insurance firms currently publish these value-based approaches as supplementary information (with the exception of bancassurers who include them within their main consolidated balance sheet and income statements). The use of value-based approaches in North America has been much slower than elsewhere. They were initially adopted by some US insurers due to the demands from their foreign parent companies. Now US firms are more generally using such methodologies internally, although as yet they do not disclose the resulting information. For example, a survey conducted by Deloitte (2005) found that over half of the chief financial officers questioned, from large to mid-size American life companies, stated that they were using value-based measures such as embedded value for their internal performance measurement.

The objective of this paper is to ascertain whether these value-based approaches, known as 'realistic reporting', are value relevant to the stock market value of a firm's equity and whether they have incremental explanatory power over and above the accounting outputs of the current report-

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[1] By 'value relevance' is meant that there is an association between the disclosure or recognition of the accounting metric of interest and the level or behaviour of stock prices. This does not necessarily imply causation (Barth et al. 2001).

ing regime.[1] The findings here do suggest affirmative answers to these two questions. This is despite the views expressed by some within the industry sector that the numbers are not reliable relative to the main statutory accounts and suffer from a number of methodological problems. Given these findings the paper then considers whether the accounting standard-setters, such as the International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB) should consider the possibility of including these value-based methods within the accounts produced using main life insurance generally accepted accounting principles (GAAP) and whether users and preparers should lobby for such a change. To date, the 'realistic reporting' appears to have grown in popularity with analysts and preparers in inverse proportion to its acceptability to accounting standard-setters. This is despite the IASB's and FASB's broad proposals in revising the *Conceptual Framework*, that financial statements should aim to provide information to a wide range of users, i.e. financial statements should not simply be focused on the special information needs of particular types of users, such as regulators, who primarily use the financial statements to help them assess an entity's liquidity and solvency (IASB, 2006).

The contribution of the paper is therefore to provide a rigorous test of the widely held view that supplementary embedded value reporting is of greater relevance to the assessment of the value of life insurance businesses than traditional statutory reporting.

Given the particular features of the life insurance industry and their complexity, Sections 2 to 4 of the paper set out the background, the pressures for accounting change and the nature of – and reactions to – the approaches to 'realistic reporting' that have been developed in recent years. Sections 5 to 8 present the empirical investigation. Section 9 concludes.

2. Background to life insurance accounting[2]

Traditionally in the UK the amounts reported in the Companies Act accounts reflected the 'statutory solvency' basis, which began with the 1870 Life Insurance Companies Act. Underlying this regime has been the existence of the long-term business fund (or funds), which has long been protected by law for the security of policyholders by providing that any profits can only be released following a professional actuarial valuation to certify the adequacy of the fund to meet its liabilities. This methodology is oriented towards delaying the recognition and distribution of profit. This is achieved by applying excessively conservative estimates (i.e. over and above a normal allowance for risk) to the various future elements, including the discount rate. Thus, future premiums are understated, claims estimates are conservative (e.g. by utilising conservative actuarial mortality tables), and expense estimates may be biased upwards, while any potential favourable impacts from lapses by policyholders are ignored. As a consequence the insurance policy is reported initially as having a negative net present value (NPV), creating an initial deficiency to be covered out of existing reserves (known in the UK as 'new business strain').

The effect of this is that even good-quality new business can, in addition to the cash flow losses, also generate accounting losses for the insurer and these can persist for the first three to six years of a policy.[3] Thereafter, the accounting profits and cumulative cash flows on the contract start to become positive and apparent only in the medium-term, as the build-up of fees and premium receipts offsets and eventually exceeds the initial deficit. So over the life of the policy (assuming initial realistic expectations are realised), there will be a flow of 'surpluses' as statutory estimates prove to be over-conservative, and this will tend to give a pattern of higher profits towards the end of the policy life. This type of accounting consequently results in the following paradox: any insurer that is a new entrant, or any established player that is particularly successful in generating substantial new life business, can easily end up reporting accounting results and solvency margins that appear significantly worse than those visible in the accounts of peers who have a mature, profitable book involving relatively little new business.

The introduction of the European Union (EU) Insurance Accounts Directive (IAD) in 1991, and its subsequent implementation with effect from 1 January 1995, led to a presentational change and the introduction of the 'Modified Statutory Solvency Basis' of accounting (MSSB). This follows the conventions of 'ordinary' accrual accounting whereby initially the policy is regarded as having a value no greater than any cost expend-

[2] Fuller detail is given in Horton and Macve (1995, 1997, 1998, 2005) and Horton et al. (2007) on which this section is based.

[3] Standard and Poors, Corporate Securitization, 30 September 2004.

[4] These normally include up-front commission payments, costs of setting up the policy on the company's administration systems, performing underwriting and policy issue functions and carrying out medicals and inspections, although IASB is currently reconsidering their appropriate definition.

[5] This accounting change did not for the most part fundamentally change the principles on which the accounts were prepared and a special provision recognising the unique 'fund' basis of UK insurance resulted in there being no net effect on bottom line results, at least for traditional with-profits business (Horton and Macve, 1995).

ed to date i.e. related acquisition costs,[4] so the NPV on inception is treated as being zero.[5] Under MSSB, the initial capitalisation of acquisition costs reduces the new business strain. These 'deferred acquisition costs' (DAC) are amortised over the term of the contract, normally in proportion to premium revenue received or, in the case of unit-linked business, to fees earned on assets under management.[6] However, MSSB still essentially requires excessive – albeit less excessive – conservatism in estimates about the future, which will unwind into profit releases (of both 'normal' profit and 'residual income', e.g. Ohlson, 1995) over the remaining policy life. So although under MSSB there is some mitigation of new business strain through DAC, users are still unable to see how current management is performing (as high profits may be the result of actions of previous management teams), which earnings relate to current performance (new business) and which relate to past performance, and what the drivers of profitability are.

3. Pressures for accounting change

Under the IAD, UK auditors were required, for the first time, to report on whether insurers' accounts give a true and fair view. This led to much debate in the UK over what further changes, if any, might be needed to meet this requirement, which in turn stimulated discussion of various forms of 'realistic' reporting for life insurance companies. Coupled with this new requirement there had also been other significant pressures for 'realistic reporting', for example the restructuring of the UK industry through takeovers and demutualisations. Such takeovers were not only by other insurers consolidating their position, but also increasingly by banks as part of a wider restructuring of the financial service industry. Managers thus felt pressure to be able to report their performance more realistically so as both to demonstrate the return from the takeovers they had made and also to provide a defence against being taken over or, if taken over, against being marginalised in the new corporate structure. There was also widespread concern that listed life companies were undervalued by the stock market and in particular that the Pearl had been acquired cheaply by AMP in the hostile 1989 takeover. Salmon and Fine (1990) described various issues which had arisen in this hostile takeover, in particular the lack of published information about the 'realistic' value until it was too late for it to be accepted and understood by the investment community.

> 'The traditional method of accounting adopted by life insurance companies in the UK is recognised to provide an incomplete measure of annual profits. A more complete measure is known as embedded value profit, details of which will, in future, be published annually by Pearl.' (*Pearl Defence Document*, 1989)

4. Realistic reporting

4.1. Embedded values, accruals method, achieved profits and European embedded values

One striking feature of the international developments over the last two decades has been the emergence around the world of alternative reporting bases that aim to improve conventional life insurance reporting – itself largely rooted in requirements for statutory solvency reporting – by introducing 'value-based' approaches.

The Pearl takeover triggered a number of UK listed companies into publishing more realistic information on a regular basis. Some companies began reporting more systematic disclosure both of their 'embedded values' (incorporating the value for shareholders expected from the future releases of surplus from the life fund) and of results computed on the basis of the change in embedded value. Embedded value only values the existing (in-force) book of policies, not the value of expected profits on future business. A major component of the analysis of the change in EV from one year to the next is the value added by the new business written in the most recent year. Thus the embedded value effectively recognises the NPV > 0 (i.e. the present value of expected 'residual incomes') as a 'Day 1' profit on inception of the policy. As a result in subsequent periods, if initial expectations are realised, the only 'profits' reported will be 'normal profits' equal to the discount rate applied to the initial value ('unwind of the discount rate').[7] The embedded value produced for supplementary reporting is generally calculated as a 'value in use' – and is the present value of the shareholders' interest in the 'in-force long-term business contracts'

[6] Practices in Europe differ over what exactly can be deferred and by how long. During 2002 AEGON announced that 2002 earnings would be 30% to 35% lower than 2001 earnings. One of the reasons for this was that the company would accelerate the amortisation of the deferred acquisition cost asset.

[7] If the discount rate is 'risk-free' rather than a 'risk-adjusted' discount rate ('RAD') – i.e. if all the risk factors are incorporated as 'margins' into the cash flow estimates – there will also be periodic profits representing releases from risk, which, together with the risk-free rate of return, will give 'normal profits'.

[8] The determination of the value of in-force business involves, *inter alia*, the following steps: a) setting assumptions about future experience of the business block; b) projecting future insurance cash flows, future assets and investment income, future liabilities and future taxes in order to determine future operating earnings; c) projecting future required capital levels consistent with the above projections; d) determining future annual distributable profits from these projections and e) calculating the present value of those distributable profits at an appropriate discount rate.

('IFLTB')[8] and the related shareholders' net assets of the in-force business, in other words the value to the shareholders of the in-force business if it continues to operate at its current level without material change (see O'Keeffe et al, 2005).

Although in any one year there is no direct relationship between MSSB accounting and embedded value accounting, because the profits on each basis relate to business written in differing time periods, the total profit shown under both bases will be the same over the term of each policy. The only difference is one of timing. EV recognises all of the present value of profit in the year the business is written, while under MSSB profits are deferred throughout the duration of each policy. In the initial growth phase of an insurer, one would expect there to be a lag effect such that EV profits are higher than MSSB profits. However, as an insurance business matures, MSSB profits should catch up with the EV profits.

The EV is thus seen as offering a number of advantages by providing *inter alia*: a more realistic alternative to MSSB accounting; valuable insights into the drivers of profitability, especially since it is consistent with management information and pricing; information on how current management is performing i.e., it facilitates communication of management actions to analysts that attempt to reflect their commercial reality; and information on the value that will emerge from business that has already been written.

However, the IAD did not specifically permit embedded value accounting and as a result most UK firms provided EV in their supplementary accounts, although the level of detail and disclosure differed considerably from company to company. Banking groups were not within the scope of the IAD, and continued to use embedded value in their primary financial statements under the banking exemptions from the normal Companies Act accounting requirements (e.g. Horton and Macve, 1995).

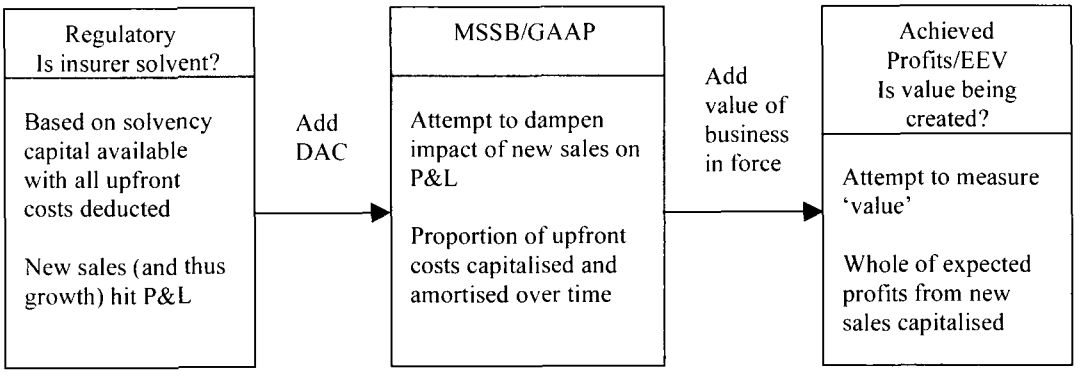
The Association of British Insurers (ABI) took up the mantle to develop a more realistic accounting approach that would fit within the constraints imposed by the conventional accounting framework. In 1990 the ABI proposed an alternative methodology of 'realistic' accounting – the 'accruals method' – that sought to apply the principles of the UK Accounting Standards Board (ASB)'s Statement of Standard Accounting Practice SSAP 9 *Accounting for Stocks and Long Term Contracts* to the insurance industry's long-term contracts and which it was thought would prove more acceptable for accounting purposes than the more actuarially driven 'embedded value' approach (see Horton and Macve, 2005). However, this approach did not receive the acceptance of the UK ASB as the primary reporting method.

Given this lack of acceptance by the ASB, coupled with many life insurers requesting that their EVs be audited, the industry realised that a framework needed to be developed that would provide more consistency and a transparent methodology, in particular in relation to the assumptions used e.g. the risk discount rate. This led to the ABI (2001) guidance, entitled *Supplementary Reporting for Long Term Insurance Business (the Achieved Profits Method)*. This guidance was optional, but in practice nearly all the listed UK insurance companies adopted it, using embedded value methodology. It was recognised that a minimum level of disclosure was required and over the last few years consistency has increased not only with respect to methodology and disclosure but also because there now appears to be convergence of the economic assumptions, which include the discount rate (see discussion below: CFO Forum, 2004). However, with this increased disclosure, and hence attention, a number of problems with traditional EV methodology have emerged, in particular issues relating to allowing for risk and reflecting the impact of options and guarantees. Given that earnings are sensitive to the assumptions employed, there was concern over the inconsistencies in assumptions between companies and also some lack of adequate disclosure. These concerns highlighted the fact that the EV methodology employs only one discount rate and this may not be appropriate given that the different products sold by insurers/bancassurers have different risk profiles. It was also noted that EV did not address the time value of options and guarantees explicitly.

Consequently, in 2004 a number of leading European insurers, collectively known as the 'CFO Forum', grouped together to jointly release a document entitled *European Embedded Value Principles* (EEV). The intention of the document was to provide a voluntary set of principles for reporting supplementary EV information that would be adopted by the chief financial officers of 19 major[9] European insurers. All CFO Forum members agreed to adopt EEV from no later than 2005.[10] Although the principles had been derived for the European insurance market, the presence of many European insurers in the Asia Pacific region

[9] By premium income and assets.

[10] In the UK Aviva plc announced (on 6 January 2005) the adoption of EEV from 2004 for its supplementary reporting, which apparently was associated with a favourable share price reaction for the sector on 7 January 2005 (Independent Newspaper, 7 January 2005). On 9 March it released its preliminary results for 2004 incorporating the EEV numbers. Aegon, Allianz, ING, Legal & General, Old Mutual, Prudential and Skandia published their year-end 2004 embedded values using methodologies and assumptions consistent with EEV Principles. Riunione Adriatica di Sicurita S.p.A (RAS) become the first Italian group and the first non-CFO Forum company to publish its EV using EEV principles.



Source: Adopted from Bernstein Analysis, *European Insurance* (2004:3)

is likely to encourage the development of such practices across other insurers in the region. The document does not radically change the traditional EV methodology (still a principles-based rather than a rules-based approach), but attempts to address a number of criticisms of previous EV practice. In particular, the lack of consistency in methodology, assumptions and disclosure practices, and the approach taken to value guarantees and options.[11] The CFO Forum acknowledged that historically the selection of EV discount rates has left significant room for judgment, which appears to have led in practice to a 'herding' tendency, and it called on all companies to apply and communicate a more rigorous and active approach to linking risks with discount rates.

In general terms, the EEV principles provide a common framework for incorporating an allowance for the risks inherent in insurance contracts in determining the value of future cash flows from in-force long-term business. The principles also provide a common standard for disclosure of the EEV results, basis of preparation, and sensitivities. Companies, though, are allowed a degree of flexibility as to the types of business valued under EEV principles, and the determination of the precise allowance for risk is at the companies' discretion rather than being dictated through a set of detailed rules. EEV disclosures in turn reflect information used for internal management and control (e.g. Goford, 1985).

> 'The key decision facing companies in implementing EEV is how to allow for risk, through a combination of discount rate, the allowance for options and guarantees and the cost of holding prudential reserves and required capital. The EEV principles compel companies to give these decisions active consideration and justification and this is to be welcomed.' (Towers Perrin, Tillinghast, *Update*, June 2005)

In summary, there are three[12] accounting systems for UK insurers. At one extreme, the traditional statutory numbers test the insurers' regulatory solvency, crucial to their ability to stay in business and grow. At the other end is EEV, which measures the present value of the cash flows coming into the insurer from in-force business, and by extension the value being created. In the middle are the IFRS MSSB numbers which capitalise some of the costs (see above).

4.2. Realistic reporting and accounting standard-setters

The IASB is engaged on a joint project with FASB on accounting for insurance contracts, which was begun by its predecessor the IASC in 1997, leading to the publication of an 'issues paper' in 1999 (IASC, 1999) and exposure of a *Draft Statement of Principles (Insurance)* (DSOP) in 2001 (IASB, 2001).[13] The IASB heads the project which was subsequently split into Phase I and Phase II in order that some (limited) improvements could be implemented in Phase I in time for the deadline of the adoption of international accounting standards for listed companies by the European Union, with effect from 1 January 2005.

> 'There remains no consensus on an appropriate longer term basis for reporting for insurance in companies' main financial statements. Consequently, for 2005 and the immediate future, companies' statutory basis results will reflect the compromise Phase I requirements of the International Accounting Standards Board (IASB).' (J. Bloomer, Prudential's CEO, 2005:101)

[11] The main change from traditional EV practice is that the costs of all financial guarantees and options must be explicitly valued and deducted from the value of in-force business.

[12] Ignoring taxation accounts, which are based on the solvency returns.

[13] The DSOP is incomplete and was not endorsed by the Board.

The IASB issued IFRS 4 *Insurance Contracts*, in March 2004, which represented the completion of 'Phase I' of the project. Here the standard imposes only limited requirements and by and large leaves existing practices – in all their variety – unchanged. Until Phase II is completed, insurers may generally continue their existing accounting policies for insurance contracts and are exempt from applying the criteria in IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors* that entities normally have to apply for developing an accounting policy where no IFRS applies specifically to an item. IFRS 4 represents a temporary mechanism for accommodating current GAAP accounting for most insurance contracts. The major issues that have held up progress and have now been postponed to Phase II are those relating to life insurance, and in particular, *inter alia*, the issues relating to the fair value of long-term insurance contracts (including the timing of recognition of profit), the treatment of 'deferred acquisition costs', and the acceptability of 'embedded values'. In short, after some 10 years of deliberation, almost all of the key underlying conceptual issues are still to be resolved.

Of potentially greater significance are the provisions that circumscribe the use of 'embedded values' in the main financial statements. Currently UK insurers are forbidden to do so by the ABI Statement of Recommended Practice (SORP) (at the behest of the ASB), while other entities such as banking groups (and Irish insurers) do have freedom to include their insurance activities on this basis. IFRS 4 does not require an entity that is currently using embedded value to abandon it or to change the methodology used: but it limits the extent to which companies can change to using embedded values in two ways. It prohibits a change of accounting policy for insurance contracts that involves measuring contractual rights to future investment management fees at an amount that exceeds their fair value implied by a comparison with current fees charged by other market participants for similar services. It introduces a rebuttable presumption that an insurer's financial statements will become less relevant and reliable (and therefore the change cannot be made) if it introduces an accounting policy that reflects future investment margins in the measurement of insurance contracts. Some present embedded value methodologies include these features, and therefore companies using them would not generally be able to start introducing embedded values into their main accounts. However, the recent EEV methodology addresses at least the second of these features. Subject to clarification of the treatment of future investment management fees it will therefore be possible, at least during Phase I, for companies to incorporate embedded values on this basis into their main accounts. The IASB has indicated that in Phase II it may not accept methods that give rise to a profit on the inception of a contract unless there is strong market-based evidence for this.

In the US, there is widespread acceptance that the current package of GAAP for insurance business that has accumulated over the last 20 years or so is no longer adequate – especially since the implementation of Statement of Financial Accounting Standard SFAS 115 in 1993 – and that life insurance earnings under US GAAP are therefore of low quality (e.g. Horton and Macve, 1995; Upton, 1996; Wilkins, 1998; c.f. O'Keeffe and Sharp, 1999; Abbott, 1999; FASB, 1999). The FASB appears to accept that the current US GAAP for insurance are overdue for comprehensive overhaul and is now therefore monitoring the IASB's progress on the joint project. The American Council of Life Insurers (ACLI), in collaboration with Ernst & Young, has researched the use of EVs by American insurance companies. They found that the embedded value has grown in popularity in the US for a number of reasons (Ernst & Young, 2004):

a) the desire for improved management information;

b) lack of relevant information from US GAAP: for example, analysis of earnings by source based on US GAAP is a complex task, whereas EV illustrates the short-term and long-term effects of changes in each key profit driver;

c) the rating agencies have increased their information requests in an effort to better understand fluctuations and trends in companies' financial results and increase the transparency of companies' financial statements and their comparability between companies and across industries;

d) investors are echoing the demands of regulators and rating agencies, calling on companies to disclose more information, both financial and non-financial.

4.3. Realistic reporting: market reactions

> 'Existing insurance accounting focuses more on the needs of prudential regulators than on the information needs of investors. As a result, the true and fair financial statements are not very good at providing shareholders with useful information about the value of their interests in the business.' (ASB, 2004: *FRS 27* comments (Appendix 4: para. 7.4))

As noted already, embedded value reporting appears to have grown in popularity with analysts and preparers in inverse proportion to its accept-

ability to accounting standard-setters. Horton and Macve (1997) conducted interviews with, *inter alia*, analysts and preparers and concluded that EVs provide the information that is most valued by analysts. The CFO Forum notes that EVs provide information relevant to shareholders' value that is not provided by traditional accounting, since it is consistent with management information and pricing and facilitates communication of management actions to the market that reflect their commercial reality. This is despite these numbers being relegated to supplementary information. Indeed anecdotal evidence suggests EVs are the dominant valuation method used by the investment community, and 33 investment banks out of a sample of 37 employ EV.[14]

> 'Given the plethora of measures, it is important to understand which are the most important! For the leading UK insurers, it is the Embedded Value. Their [UK insurers] solvency is strong enough that they pass that hygiene factor, and investors tend to prefer the EV measure to the 'official' MSSB when looking at valuation.' (*Bernstein Research Call*, October 2004)

Credit Suisse states '...we focus on embedded value (EV) in our valuation approach for the sector and the stocks, as does the market',[15] although they go on to say that, while the IFRS numbers do not drive their valuation, 'it is also important, in our opinion, to look at P/E multiples of stated IFRS or GAAP earnings, which are the closest measure of "cash earnings" that we have in the sector.'

> '...it is important not to ignore IFRS profit. Although these profits contain a large intangible element (mainly through the deferral of acquisition costs, or DAC), they are probably a better indicator of current cash generation than the embedded value'. (Credit Suisse First Boston, *Equity Research*, July 2005:32)

Deloitte (2005) notes that, for US firms, analysts would begin to ask for their internal EV measures within the next three years, especially given that the trend towards harmonisation of accounting standards means Europeans adoption of EV is likely to spread around the globe. Thus it will become increasingly difficult for the remaining North-American companies to resist providing EV information in their financial statements.

However, analysts do not appear to accept the EV reported by the companies at 'face value' and many adjust the assumptions, and in particular the discount rate.

> 'A major risk in the context of embedded value, when issuers are capitalising future cash flows they have not yet received, is 'assumption risk'. This risk that economic and operational assumptions used to measure profitability may not be experienced in practice.' (Credit Suisse First Boston, *Equity Research*, July 2005:32)

Note that JP Morgan in 2004 changed its valuation driver from EV to MSSB on the grounds that EV 'are highly reliant on assumptions that we find too optimistic'.[16] Following the introduction of EEV the market reaction has appeared to be positive with the view that EEV provides a significant step forward in improving consistency, transparency, and comparability. PricewaterhouseCoopers (2005) conducted a survey of analysts[17] and found that more than 60% of the analysts rated the adequacy of European insurers' financial reporting as 'poor'. Less than 10% felt that it was good. Nearly 80% felt EEV is more useful than IASB's 'Phase I' (IFRS 4) and almost all analysts believed EEV will improve the comparability of European life company accounts. Indeed, the majority of analysts also believed that they are beginning to favour EEV over 'fair value'.[18] However, the discussions revealed some reservations about how EEV will be applied in practice, and underlying this was a certain level of scepticism about both IFRS 4 numbers and EEV. PwC quotes one analyst as saying:

> '...companies always seem to arrive at the same number whatever the basis for evaluation'.

It was noted that nearly 20% of the analysts believed that insurers' EVs will stay the same despite the modifications of EEV. Bernstein Analysis (2004) notes that the main effect of the IFRS change has been in the expense incurred by companies, since the combination of a series of accounting changes in implementing the full range of IFRS has put a strain on the finance departments that they believe cost tens of millions of pounds. Under IFRS, the published annual reports and accounts will roughly double in size, with the addition of both the required and any optional disclosures. Bernstein also believes 'while the overall numbers will be unaffected, the accounts will look very different' and that:

> 'It remains to be seen whether the analysts union (the Union of General and Life Insurance

[14] The four investment banks that currently do not employ EV in their valuation methods are Dexia (Paris), JP Morgan (UK), KBC (Brussels) and WestLB (Germany).

[15] Credit Suisse First Boston, *Equity Research* July 2005. Credit Suisse's valuation approach is based on a sum-of-the-parts valuation model for each stock. This is based on estimating sustainable return on capital/embedded value of each division in a group and applying appropriate multiples to allocated capital. This is consistent with other investment banks.

[16] See footnote 14 above.

[17] Analysts interviewed consisted of 50 buy and sell side insurance analysts based across Europe.

[18] Although the difference between EV and FV was not clearly defined.

Analysts, or UGLIA for short) will resort to direct action in protest at this new burden.'

Following this background, the remainder of this paper sets out the empirical testing undertaken and its results. It is structured as follows: first, an explanation of the research hypotheses; next, a description of the research design and methodology used to test value relevance, followed by the sample and descriptive statistics, and then the results from the various models. Last, I comment on some possible implications of these results for standard-setters (in particular the IASB and the FASB in the conduct of their joint Phase II insurance project) and for the industry.

5. Hypotheses

Given the differing views of the usefulness of the different types of accounting information available to users, and in particular the issues relating to the reliability and relevance of the 'realistic' numbers reported by companies, the following hypotheses are tested:

H_1: *The 'Realistic Reporting' disclosures are value-relevant to the market value of the firm's equity.*

H_2: *The 'Realistic Reporting' disclosures are incrementally value-relevant over the modified statutory solvency basis ('MSSB') earnings and accounting book values.*

Realistic reporting disclosures are controversial and this might suggest they are not reliable, yet I find that they are value relevant. Value relevance implies that realistic reporting is not totally unreliable. Kallapur and Kwan (2004) investigated *inter alia* the reliability of brand capitalisation by firms. They investigated the difference in brand capitalisation rates of firms with strong and weak contracting incentives and found that brand asset measures might not be reliable. Given that my sample is industry specific and the fact that all insurance companies disclose, in some form or another, realistic reporting, it would be difficult to test differential reliability any further. As discussed above, anecdotal evidence does suggest that certainly the ASB, IASB and some analysts do not believe the numbers are particularly reliable, albeit that they are relevant in principle.

6. Research design and methodology

6.1. Value relevance of realistic reporting

In order to test hypotheses 1 and 2, I need to ascertain whether the market value (stock price) reflects the incremental information contained in the realistic reporting accounting disclosures over and above the Modified Statutory Solvency Basis ('MSSB') accounting numbers for life insurance and bancassurer firms. Previous value-relevant studies such as Dechow et al. (1999), Barth et al. (2001), Graham et al. (2003) and Kallapur and Kwan (2004), have applied the well-known work of Ohlson (1995). However, unlike these previous studies, this study suffers from an extremely small sample size, since the UK insurance industry currently only contains eight life insurance companies, which therefore limits the model specifications and introduces potentially numerous econometric issues. To limit some of these econometric issues I employ both parametric and non-parametric tests.

6.2. Parametric tests

The Ohlson model does provide a framework within which to examine the value relevance of life insurance reporting, in that it relates the value of the firm to the information provided in both the income statement and balance sheet together with any other value relevant information.

Consequently, I test the value relevance and incremental information content of the 'realistic reporting' by investigating the changes in explanatory power from the basic model, which regresses the market value of equity on book value of equity and net income (both valued using the modified statutory solvency basis (MSSB)), to the full model, which in addition includes the realistic reporting asset – 'additional value of in-force long-term business' (*IFLTB*) and the achieved life profits (*APLFBT*). Both models use pooled annual time-series and cross-sectional data for all sample firm-years. I estimate the following regressions:

$$MVE_{it+3mnths} = \alpha_0 + \beta_1 MSSBK_{it} + \beta_2 MSSERN_{it} + \varepsilon_{it}, \quad \text{(Basic Model 1)}$$

$$MVE_{it+3mnths} = \alpha_0 + \beta_1 MSSBK_{it} + \beta_2 MSSERN_{it} + \beta_3 IFLTB_{it} + \beta_4 APLFBT_{it} + \varepsilon_{it}, \quad \text{(Full Model 1)}$$

where:

MVE = market value of equity;
MSSBK = book value of equity valued under MSSB;
MSSERN = net income (both life and non-life business) valued under MSSB;
IFLTB = the additional present value of the in-force long-term business;[19]
APLFBT = the achieved profits before taxation for the life insurance business (i.e. not including non-life business profits).[20]

[19] *IFLTB* is incremental to *MSSBK*, and does not represent *MSSBK* plus an adjustment. In any one year there is no direct relationship between *MSSB* accounting and embedded value accounting, because, as stated earlier the profits emerging on each basis relate to business written in differing time periods.

[20] Footnote also 19 holds true for *APLFBT*.

Consistent with the suggestions of Barth and Kallapur (1996), both equations are estimated undeflated with White's (1980) correction for heteroskedasticity. However, in order to test the robustness of my results to alternative specifications, I also estimate the models using the number of shares outstanding as a deflator (i.e. a price-per-share specification). Given the suggestion noted in Barth et al. (1996), I also re-run the models with a separate variable to proxy for scale – number of common shares outstanding.[21] However, the results are not materially different and the coefficient of the proxy for scale is not found to be significant.[22]

If 'realistic reporting' has value relevance then the change in the explanatory power from the basic model to the full model should be positive and significant. This significance would indicate that the realistic reporting is associated with market values after controlling for book value and net income reported under MSSB. Given the econometric issues associated with my small sample size, I measure value relevance based simply on the increased overall explanatory power of the 'realistic accounting' with respect to prices. For example, Collins et al. (1999) and Francis and Schipper (1999) both rely on R^2 in making inferences regarding changes in value relevance over time.

A number of studies have either used the firm's accounting year-end for time t, or three months after the accounting year end $t+3mths$. Similar to Graham et al. (2003), market prices as of 31 March in year $t+1$ are used because all the firms included in this study have the same accounting year-end (which ensures uniform disclosure of both MSSB accounting and of realistic reporting in each year, (Berry and Wright, 2001)) and the realistic reporting disclosures are not likely to be made until their preliminary earnings announcements and/or detailed information is released in their annual reports.[23]

While the price model is widely accepted as an appropriate methodology for testing the value relevance of financial information, many researchers continue to use a cumulative returns methodology in addition to the price model. Consequently, in a manner similar to the tests above, I also test the value relevance of the 'realistic reporting' numbers using a returns specification. Starting with the price regression and then taking the first difference and deflating by beginning of period price I thus estimate the following basic and full returns regressions:

$$RTN_{it+3mnths} = \alpha_0 + \beta_1 MSSERN_{it} + \beta_2 \Delta MSSERN_{it} + \varepsilon_{it}, \quad \text{(Basic Model 2)}$$

$$RTN_{it+3mnths} = \alpha_0 + \beta_1 MSSERN_{it} + \beta_2 \Delta MSSERN_{it} + \beta_3 APLFBT_{it} + \beta_4 \Delta APLFBT_{it} + \varepsilon_{it}, \quad \text{(Full Model 2)}$$

where:

$RTN_{it+3mnths}$ = is the 12-month compound daily market-adjusted return,[24] beginning nine months prior to the accounting year-end and ending the third month following the firm's accounting year-end;[25]

[21] Additional deflators were also used – market value of equity at the beginning of the fiscal year, share price at the beginning of the fiscal year – but the results were not materially different and hence are not reported here.

[22] I also augment the above models to control for cross-sectional differences that have been shown to affect the relative roles of earnings and book values in explaining stock price. For example, Barth et al. (1999) control for firms' growth as this may also affect the relative role of earnings in determining stock price. Similarly Collins et al. (1999) found evidence of smaller net income pricing multiples for loss-making firms. Thus we include additional dummy variables SIZE, GROWTH and LOSS. The first two are indicator variables that equal one if the firm has market capitalisation and growth in the book value of equity above the sample median, and zero otherwise, and LOSS is an indicator variable that equals one if the firm has negative net income and zero otherwise. The results post-inclusion of these additional variables were not significantly different from those pre-inclusion for the variables of interest and therefore are not reported here. In addition, all the models reported above were also rerun to control for fixed year effects, similar to Kallapur and Kwan (2004). We included a dummy variable to control for these effects. If correlated with the independent variables these effects could otherwise bias the regression coefficients. Even if uncorrelated, the effects could still bias the t-statistics by inducing contemporaneous cross-correlation of residuals. Thus each equation had the additional variable included

$$\sum_{t=00}^{t=03} \alpha_t YRDUM_t$$

where *YRDUM* is a dummy variable equalling 1 if the year is t and 0 otherwise. The results for all the models post inclusion were qualitatively unchanged, and therefore are not reported here.

[23] It can be noted that because all other variables are measured as of 31 December in year t, using 31 March in year $t+1$ market prices may add noise to my tests. The models were rerun using year-end market values and the results were similar – all coefficients had exactly the same signs, although the significances of the 'realistic reporting' disclosures, albeit still significant, were less.

[24] An additional market-adjusted return was calculated to remove the effects of industry-wide events from the returns measure, by also removing the industry index, which represented the equally weighted return for all sample life firms. The results were not materially different and thus are not reported.

[25] Cumulative Abnormal Returns were also calculated by accumulating weekly prediction errors from the market model over the accounting year. The independent variables were deflated by the market value of equity at the beginning of the accounting year to control for differences in firm size that could result in heteroskedasticity. The market model parameters were estimated for each firm using weekly data from the 50 weeks preceding the test year and the FTSE-All Share Index. The results were not significantly different from those using the market-adjusted returns and so only the latter results are reported.

$\Delta MSSERN_{it}$ = the annual change in MSSB (i.e. 'GAAP') income, i.e. $MSSERN_{it} - MSSERN_{it-1}$;

$\Delta APLFBT_{it}$ = the annual change in the achieved life profits (before tax), i.e. $APLFBT_{it} - APLFBT_{it-1}$.

All other variables are as previously defined.

Both the earnings level and earnings change are included in the above models following the findings of Easton and Harris (1991), who found that both aspects of earnings are relevant for explaining returns and are not just substitutes.[26]

6.3. Non-parametric tests

I also investigate the correlation structures between the dependent and each of the independent variables. The individual observations are ranked into two ordered series and then their level of association is tested via the Spearman rank and Kendall tau[27] tests. If the independent variables are value relevant, in terms of their association with price or returns, then I would expect the level of association to be significantly different from zero.

7. Sample and descriptive statistics

7.1. Sample selection

The sample consists of all UK publicly traded insurance companies and banks that conducted life insurance business, and disclosed embedded value to measure their 'achieved profits' during the period 2000 to 2004. I manually extracted the accounting numbers, including the achieved profits results and embedded values, directly from the firms' own annual reports because these values are not separately reported in any available database. I obtained stock prices from Datastream. My sample includes eight life insurance firms[28] and two bancassurers.[29]

I also examined the financial statements to determine the firms' 'realistic reporting' methodology as well as their disclosure policy (see Table 1).

The majority of firms used the modified statutory solvency basis (MSSB) in their main accounts and then provided supplementary information, initially in 2000 based on ABI Guidance notes issued in 1999, and then using the Achieved Profits methodology (ABI, 2001) in 2001 onwards. The exceptions to this were three of the life companies – Aviva plc, Countrywide Insurance, and St James's Place – and both bancassurers. These three life insurance companies included in the balance sheet in their main accounts, prior to 2002,[30] the 'present value of in-force long-term business' (*IFLTB*) and, except for Aviva, the change in the *IFLTB* was also included in the profit and loss account in the main accounts. After 2002, the companies removed the *IFLTB* and the change in *IFLTB* from their main accounts and disclosed it purely as supplementary information. The main reason given for such a change was due to the firms adopting FRS 18: *Accounting Policies* (ASB, 2000).[31] As a result, the firms adopted the recommended practice on accounting for life insurance business under which the ASB had not allowed this value to be recognised in the main accounts. Both bancassurers continued to recognise the *IFLTB* and change in the *IFLTB* in their main accounts, with disclosure of the MSSB life profits in the notes (from 2002 onwards).

The first UK firm to disclose the European Embedded Value (EEV) in their 2004 accounts was Aviva plc.

In Table 2, I present financial data for the sample firms. The present value of internally generated in-force long-term business (*IFLTB*) is substantial relative to the book value of shareholders' equity under the MSSB methodology with an overall median of 63% of the MSSB amount (including banks) and 70% (excluding banks). It may be noted that the Britannic Insurance plc's market-to-book ratio under the realistic reporting method is 0.85: this may be due in part to the fact that Britannic is a closed fund i.e. closed to new business. Theoretically, the market value of a closed fund (i.e. where there is no value of anticipated future new business) should be 100% of the EV. Further investigation is needed to understand whether this difference is due a) to measurement error in the embedded value disclosed by Britannic, e.g. issues about valuation of options and guarantees

[26] Ali and Zarowin (1992) note that the explanatory power of the earnings level is consistent with the presence of transitory components of annual earnings, hence earnings level acts as an additional proxy for unexpected earnings when the previous period's earnings are not purely permanent, and thereby contributes to the explanatory power of the unexpected earnings-abnormal returns model.

[27] In addition, we also calculated the coefficient Gamma but the results were identical to the Kendall tau and are therefore not reported.

[28] 10 life insurance firms were listed on the Stock Exchange as of 31 December 1999. However, three of these firms were delisted during the 2000 period. One firm was added during 2001, Friends Provident.

[29] 10 banks were listed on the Stock Exchange as of 31 December 1999. Of these, only six conducted life insurance directly and of those only two reported the data required for the analysis for the periods 2002 to 2004.

[30] Aviva included *IFLTB* in their 2002 accounts also.

[31] FRS 18 deals primarily with the selection, application and disclosure of accounting policies. Its objective is to ensure that for all material items an entity adopts the accounting policies most appropriate to its particular circumstances for the purpose of giving a true and fair view; that the accounting policies adopted are reviewed regularly to ensure that they remain appropriate and are changed when a new policy becomes more appropriate to the entity's particular circumstances; and that sufficient information is disclosed in the financial statements to enable users to understand the accounting policies adopted and how they have been implemented (ASB, 2000).

Table 1
Accounting methodology reported by firms in their main accounts and in any supplementary accounts

		Main accounts		*Supplementary accounts*	
Name	*Year*	*Balance sheet*	*Profit & loss*	*Balance sheet*	*Profit & loss*
Aviva	2000	MSSBK + IFLTB	MSSERN	N/A	MSSERN (NL) + AP[b]
	2001	MSSBK + IFLTB	MSSERN	N/A	MSSERN (NL) + AP[c]
	2002	MSSBK+ IFLTB	MSSERN	N/A	MSSERN (NL) + AP[c]
	2003	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2004	MSSBK	MSSERN	APBK[d]	MSSERN (NL) + AP[d]
Britannic	2000	MSSBK	MSSERN	APBK[b]	MSSERN (NL) + AP[b]
	2001	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2002	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2003	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2004	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
Countrywide Insurance	2000	MSSBK + IFLTB	MSSERN +AP[b] (LF)	Notes: MSS	Notes: MSS
	2001	MSSBK + IFLTB	MSSERN +AP[b] (LF)	Notes: MSS	Notes: MSS
	2002	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2003	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2004	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
Friends Provident	2001	MSSBK	MSSERN	APBK[b]	MSSERN (NL) + AP[b]
	2002	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2003	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2004	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
HBOS	2002	MSSBK + IFLTB	MSSERN +AP[b] (LF)	N/A	MSSERN (LF) – notes
	2003	MSSBK + IFLTB	MSSERN +AP[c] (LF)	N/A	MSSERN (LF) – notes
	2004	MSSBK + IFLTB	MSSERN +AP[c] (LF)	N/A	MSSERN (LF) – notes
Legal & General	2000	MSSBK	MSSERN	APBK[b]	MSSERN (NL) + AP[b]
	2001	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2002	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2003	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2004	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
Lloyds TSB	2002	MSSBK + IFLTB	MSSERN +AP[b] (LF)	N/A	MSSERN (LF) – notes
	2003	MSSBK + IFLTB	MSSERN +AP[c] (LF)	N/A	MSSERN (LF) – notes
	2004	MSSBK + IFLTB	MSSERN +AP[c] (LF)	N/A	MSSERN (LF) – notes

Table 1
Accounting methodology reported by firms in their main accounts and in any supplementary accounts (continued)

		Main accounts		*Supplementary accounts*	
Name	*Year*	*Balance sheet*	*Profit & loss*	*Balance sheet*	*Profit & loss*
Old Mutual	2000	MSSBK	MSSERN	APBK[b] (LF)	AP[b]
	2001	MSSBK	MSSERN	APBK[b] (LF)	AP[b]
	2002	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2003	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2004	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
Prudential	2000	MSSBK	MSSERN	APBK[a]	MSSERN (NL) + AP[a]
	2001	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2002	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2003	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2004	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
St James's Place	2001	MSSBK + IFLTB	MSSERN +AP[b] (LF)	N/A	N/A
	2002	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2003	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]
	2004	MSSBK	MSSERN	APBK[c]	MSSERN (NL) + AP[c]

MSSBK = Total shareholders equity on the modified statutory solvency basis (MSSB);
MSSERN = Net income valued on the modified statutory solvency basis; *MSSERN (NL)* = Non-life income valued on the modified statutory solvency basis; *MSSERN (LF)* = Life income valued on the modified statutory solvency basis; *IFLTB* = In-force long-term business; *AP* = Life insurance income using the ABI Guidance (see below); *APBK* = Total shareholders equity valued using the ABI Guidance (see below), *APBK(LF)* = Shareholders equity of the life business using the ABI Guidance (see below); [a] = ABI Guidance July 1995; [b] = 'Guidance on accounting in group accounts for proprietary companies long-term business' circulated by the Association of British Insurers, 1999; [c] = 'Supplementary reporting for long-term insurance business (the achieved profits method), circulated by the Association of British Insurers in December 2001; [d] = European embedded value (EEV) principles introduced by the CFO Forum in May 2004.

Table 2
Descriptive statistics (number of observations, median and range (in parenthesis)) for UK insurance and bancassurer firms disclosing balance sheet and profit and loss items based on the 'realistic reporting' and 'modified statutory solvency basis' (MSSB) methodologies by firm and their market capitalisation (MVE)

				Balance sheet			*Profit and loss account*		
Firm name	*N*	*Accounting periods*	*MVE* £'000	*MSSBK* £'000	*IFLTB* £'000	*IFLTB/ MSSBK*	*MSSERN* £'000	*APLFBT* £'000	*APBT/ MSSERNBT*
Aviva	5	2000–2004	14,500,000	6,613,000	4,875,000	0.72	16,000	1,151,000	1.49
			(27,594,300)	(2,568,000)	(2,141,000)		(2,764,000)	(3,606,000)	
Britannic Insurance[a]	5	2000–2004	925,170	760,000	287,000	0.28	44,100	65,500	1.37
			(1,201,460)	(611,300)	(210,300)		(297,000)	(231,800)	
Countrywide Insurance[b]	5	2000–2004	521,210	96,203	135,960	1.19	48,301	–2,986	0.74
			(336,260)	(71,083)	(80,814)		(51,817)	(85,841)	
Friends Provident	4	2001–2004	2,919,100	2,095,000	1,272,500	0.60	101,000	–18,500	1.25
			(2,017,440)	(563,000)	(435,000)		(258,000)	(1,092,000)	
HBOS	3	2002–2004	28,450,000	14,250,000	3,950,000	0.28	2,144,000	525,000	1.13
			(7,741,590)	(3,502,00)	(882,000)		(935,000)	(481,000)	
Legal & General	5	2000–2004	7,368,000	3,187,000	2,232,000	0.72	317,000	281,000	1.89
			(3,825,650)	(614,000)	(863,000)		(655,000)	(1,497,000)	
Lloyds TSB Group	3	2002–2004	23,130,000	7,377,000	2,904,000	0.39	2,401,000	453,000	1.01
			(8,774,070)	(2,104,000)	(60,000)		(1,499,000)	(1,018,000)	
Old Mutual	5	2000–2004	3,875,300	2,863,000	823,000	0.24	273,000	223,000	0.77
			(2,390,840)	(1,148,000)	(258,000)		(729,000)	(2,956,000)	
Prudential	5	2000–2004	12,020,000	3,950,000	4,200,000	1.06	428,000	683,000	0.77
			(8,724,370)	(1,003,000)	(1,285,000)		(480,000)	(2,354,000)	
St.James's Place	4	2001–2004	925,980	203,500	349,950	1.89	8,465	92,950	4.70
			(824,980)	(42,100)	(130,300)		(81,200)	(77,500)	
Median	44		4,850,000	3,023,500	1,407,500	0.63	107,090	113,750	1.10
Range			(31,975,900)	(16,153,344)	(5,975,028)		(4,945,000)	(4,319,000)	
Median (excl. banks)	38		3,772,500	2,616,000	965,500	0.70	47,800	87,900	1.13
Range (excl. banks)			(21,642,900)	(8,248,344)	(5,975,028)		(2,764,000)	(4,319,000)	

For Friends Provident this company was not listed until 2001; HBOS and Lloyds TSB did not report modified statutory solvency numbers until 2002; [a] = now known as Resolution; [b] = now known as Chesnara plc; *MVE* = market value of equity; *MSSBK* = book value of shareholders' equity valued under the modified statutory solvency basis; *IFLTB* = the additional present value of the in-force long term business; *MSSERN* = net income (both life and non-life business) valued under the modified statutory solvency basis; *MSSERNBT* = *MSSERN* before taxation; *APLFBT* = the achieved profits before taxation for the life insurance business (i.e. does not include non-life business profits), many of the firms did not disclose the total life business profit after tax or provide enough disclosure to calculate it; *APBT* = total achieved profit before tax i.e. including non-life business profits.

or b) to the consequences of moving from valuing the in-force book within the context of an ongoing business whose activities, expenses etc. are shared with the generation of new business, or c) to the effect of other market factors, such as the terms on which takeover deals are struck and the relative power of the buyer and the seller in a thin market.

The 'realistic reporting' total income known as 'achieved profits' – (i.e. including both life and non-life business profits, in this case before taxation) (*APBT*) – is relatively higher generally than total income (before taxation) reported under MSSB (*MSSERNBT*) with an overall median relative value of 110% (including banks) and 113% (excluding banks).

7.2. Descriptive statistics

Descriptive statistics are presented in Table 2. Table 2 shows that the median in-force long-term business (*IFLTB*) is approx £1,408m (excluding the banks – £966m) – the highest median value was that of Aviva plc at approx £4,875m and the lowest was that of Countrywide Insurance plc at approx £136m. Similarly, the median book value of shareholders' equity under the MSSB method (*MSSBK*) is £3,024m (excluding the banks' £2,616m) – the highest median value was that of the bank HBOS at £14,250m and the lowest was that of Countrywide Insurance at £96m.

The median life profits reported (before tax) under the 'realistic reporting' regime (*APLFBT*) is approximately £114m (excluding the banks' £88m) – the highest median value was that of Aviva at £1,151m and the lowest median value was that of Friends Provident plc at a negative £18.5m. The median net income for the year under MSSB (*MSSERN*) is £107m (excluding the banks' £48m) – the highest median value (excluding the banks) was that of Prudential at £428m and the lowest was that of Aviva at £16m.

8. Results

8.1. Non-parametric results

Table 3 presents the measures of association between the ranked dependent and independent variables used in the regressions. In Panel A and Panel C the level of association between the market value of equity (*MVE*) and all the ranked independent variables for all years 2000–2004 is significantly positive at the 0.1% level under both the Spearman rank and Kendall tau tests, with the exception of achieved profits (*APLFBT*) which has a significance level only at 2%. For each individual year, the significance of the in-force long-term business (*IFLTB*) and the book value under MSSB is consistent at 2% or above. This is not the case for either the earnings under MSSB or the achieved profits (*APLFBT*). Removing the bancassurers from the sample results reduces the level of association for the earnings under MSSB to 2% (see Panels B and D). All other associations remain at the same level of significance, as with the full sample. These relationships are also maintained for variables on a per-share basis (see Panels A to D) for all years 2000–2004.

It appears from these first results that the realistic reporting disclosures are value relevant and therefore Hypothesis 1 appears to be supported. This is especially true for the in-force long-term business asset (*IFLTB*), which appears to have a very significant and robust association with both market value and price-per-share.

8.2. Parametric results

The results for equations Basic Model 1 and Full Model 1 are reported in Table 4. Following Belsley et al. (1980) *DFBETAS* were estimated to ascertain whether there were outliers driving the results – one outlier was identified and deleted from the sample, however the results of the variables of interest post-deletion were qualitatively unchanged.

The overall adjusted R^2 for the full model was approximately 90% for the full sample and 93% for the life sample respectively. For comparison, value relevance studies have reported high adjusted R^2 of 84% (Graham et al., 2003), 96% (Kallapur and Kwan, 2004, UK data), 81% (Harris and Kemsley, 1999) and 62% (Francis and Schipper, 1999). For the full sample, the adjusted R^2 of the basic model (i.e. without realistic reporting) is approximately 82%, compared to 90% for the full model (i.e. including the realistic reporting numbers (*IFLTB* and *APLFBT*)).

The results indicate that by adding the realistic reporting numbers into the basic model the explanatory power of the model increases significantly, given that the partial-F statistic is significant at the 0.1% level. For instance, the partial F-statistic increases from 17.60 to 27.59 for the life sample.

Consistent with the non-parametric results it appears there is support for Hypothesis 1. In addition, the results also indicate that the realistic reporting provides incremental information over earnings and book value of equity under the MSSB, thus supporting Hypothesis 2. The realistic reporting disclosures appear to contribute significantly to the valuation model since the partial F-statistic is significant at the 0.1% level and also appear to be incrementally value-relevant over the MSSB earnings and book value. The market seems to place a high value on these 'realistic' disclosures.

Interpretation of the correlation coefficients and significance of the individual independent variables in the models cannot go beyond general comments because of the small number of avail-

Table 3
Summary of non-parametric tests for measures of association with market value of equity

Panel A: Spearman rank correlation coefficients (for full sample)

Year(s)	2000 (n=6) *MVE*	2001 (n=8) *MVE*	2002 (n=10) *MVE*	2003 (n=10) *MVE*	2004 (n=10) *MVE*	2000–2004 (n=44) *MVE*	*2000–2004 (n=44)* Per-share
MSSBK	0.94**	1.00***	0.99***	0.98***	0.98***	0.96***	0.71***
IFLTB	1.00***	0.95**	0.92***	0.93***	0.92***	0.91***	0.78***
MSSERN	0.09	–0.02	0.39	0.90***	0.94***	0.59***	0.45**
APLFBT	1.00***	–0.19	–0.13	0.71**	0.70*	0.45**	0.37**

Panel B: Spearman rank correlation coefficients (for life sample)

Year(s)	2000 (n=6) *MVE*	2001 (n=8) *MVE*	2002 (n=10) *MVE*	2003 (n=10) *MVE*	2004 (n=10) *MVE*	2000–2004 (n=44) *MVE*	*2000–2004 (n=44)* Per-share
MSSBK	0.94**	1.00***	1.00***	0.98***	0.98***	0.96***	0.68***
IFLTB	1.00***	0.95**	0.95***	0.98***	0.95***	0.95***	0.82***
MSSERN	0.09	–0.02	–0.17	0.83***	0.88**	0.38**	0.31
APLFBT	1.00***	–0.19	–0.62	1.00***	1.00***	0.42**	0.41**

Panel C: Kendal tau (for full sample)

Year(s)	2000 (n=6) *MVE*	2001 (n=8) *MVE*	2002 (n=10) *MVE*	2003 (n=10) *MVE*	2004 (n=10) *MVE*	2000–2004 (n=44) *MVE*	*2000–2004 (n=44)* Per-share
MSSBK	0.87**	1.00***	0.96***	0.91***	0.91***	0.84***	0.53***
IFLTB	1.00**	0.86**	0.78**	0.82***	0.78**	0.75***	0.58***
MSSERN	0.20	–0.07	0.24	0.73***	0.82***	0.44***	0.35***
APLFBT	1.00**	–0.21	–0.11	0.64***	0.60**	0.32**	0.27**

Panel D: Kendal tau (for life sample)

Year(s)	2000 (n=6) *MVE*	2001 (n=8) *MVE*	2002 (n=10) *MVE*	2003 (n=10) *MVE*	2004 (n=10) *MVE*	2000–2004 (n=44) *MVE*	*2000–2004 (n=44)* Per-share
MSSBK	0.87***	1.00***	1.00***	0.93***	0.93***	0.84***	0.51***
IFLTB	1.00**	0.86**	0.86**	0.93***	0.86**	0.81***	0.64***
MSSERN	0.20	–0.07	–0.14	0.64**	0.71**	0.27**	0.25*
APLFBT	1.00**	–0.21	–0.50	1.00***	1.00***	0.33**	0.31**

*, **, *** indicate significance at 5, 2 and 0.1% levels respectively.
MVE = market value of equity.
MSSBK = book value of shareholders' equity valued under the modified statutory solvency basis.
IFLTB = the additional present value of the in-force long-term business.
MSSERN = net income (both life and non-life business) valued under the modified statutory solvency basis.
APLFBT = the achieved profits before taxation for the life insurance business (i.e. does not include non-life business profits).

Table 4
Test of value relevance of 'realistic reporting': partial F-statistics with coefficients values and t-statistics for the regression (White's t-statistics in parentheses)

$$MVE_{it+3mnths} = \alpha_0 + \beta_1 MSSBK_{it} + \beta_2 MSSERN_{it} + \varepsilon_{it}, \quad \text{(Basic Model 1)}$$

$$MVE_{it+3mnths} = \alpha_0 + \beta_1 MSSBK_{it} + \beta_2 MSSERN_{it} + \beta_3 IFLTB_{it} + \beta_4 APLFBT_{it} + \varepsilon_{it}, \quad \text{(Full Model 1)}$$

Variable	*Panel A: Market value*				*Panel B: Price-per-share*			
	Full sample (n=43[a])		Life sample (37 excl. banks)		Full sample (n=43[a])		Life sample (37 excl. banks)	
	Basic	*Full*	*Basic*	*Full*	*Basic*	*Full*	*Basic*	*Full*
R^2 Adj	81.99%	90.16%	79.81%	92.59%	64.26%	77.00%	58.99%	83.20%
F-statistic	96.67***	97.26***	72.15***	113.46***	38.75***	36.16%	26.90***	45.56***
Partial F-statistic		**17.60*****		**27.59*****		**12.09*****		**25.48*****
Intercept	9.96E+08 (1.20)	–6.27E+08 (–1.49)	–3.82E+08 (–0.99)	–2.39E+07 (–0.14)	95.91 (3.81)***	16.83 (0.69)	87.88 (3.70)***	0.13 (0.01)
MSSBK	1.71 (4.01)***	0.85 (3.77)***	2.30 (10.12)***	0.55 (2.16)*	1.36 (9.77)***	0.82 (4.75)***	1.33 (9.09)***	0.49 (2.30)*
MSSERN	3.06 (1.68)*	3.77 (2.68)***	0.94 (0.65)	1.12 (1.47)	1.84 (1.67)*	1.73 (1.81)*	1.21 (0.80)	0.07 (0.07)
IFLTB	–	2.19 (6.37)***	–	2.24 (6.83)***	–	1.72 (3.90)***		2.13 (5.85)***
APLFBT	–	0.13 (0.16)	–	0.76 (2.09)**	–	0.41 (0.49)		1.15 (3.04)***

[a] = excluded one outlier following the calculation of *DFBETAS*.
*, **, *** indicate significance at 5, 2 and 0.1% levels respectively.
MVE = market value of equity.
MSSBK = book value of shareholders' equity valued on the modified statutory solvency basis.
MSSERN = net income valued on the modified statutory solvency basis.
IFLTB = present value of in-force long-term business.
APLFBT = achieved profits for the long-term business (before taxation).

able observations and issues of multicollinearity.[32] However, the results are not inconsistent with my hypotheses and the results from the non-parametric tests. Thus, one can observe that the overall increase in explanatory power from the basic to the full model appears to be driven primarily by the in-force long-term business asset (*IFLTB*), since the coefficient is positive and appears to be significant at the 0.1% level. This is maintained for both samples (with and without bancassurers) and under both specifications (deflated and un-deflated). The level of significance does not appear to depend upon whether the *IFLTB* asset was disclosed within the main accounts or as supplementary information.[33] One can further observe that this in-force long term business asset (*IFTLB*) significantly reduces the relevance of the MSSB book value in the case of the life sample but not in the case of the full sample: this is consistent with the interpretation that once the banks are included the 'realistic reporting' adjustments represent a much lower proportion of total reported book value. Therefore, the in-force long-term business (*IFLTB*) seems to be value relevant and have incremental price relevance over and above the statutory numbers, despite the issues widely perceived in relation to the reliability of EV.[34] Similarly, the MSSB earnings appear to remain significant for the sample when the banks are included but have no apparent significance for the life companies only. The results again appear to be consistent with, and to that extent support, the anecdotal evidence from the insurance companies, the CFO Forum, the ABI and the majority of analysts, as discussed above.

Again, the achieved profits disclosure (*APLFBT*) appears to add explanatory power for the life sample only (i.e. excluding the bancassurers). The significance is at the 2% level for the un-deflated model and at the 0.1% level for the per-share model. That the *APLFBT* disclosure appears to be relevant and have incremental price relevance over and above the statutory numbers only for the life companies is credible, given the much higher proportion represented by their life business relative to the bancassurers and thus the much greater effect on their main GAAP accounts. It may be noted that coefficients on the book value under the MSSB method (*MSSBK*) are positive for both basic and full model specifications (both deflated and un-deflated) and for both samples (full and life only). They are significant at the 0.1% level for the un-deflated model (except only at the 5% level for life sample full model).[35] Although the coefficients on the MSSB earnings (*MSSERN*) are all positive they are significant only for the full sample (for both basic and full models, deflated and un-deflated) but not significant for the life sample. Further analysis suggests that the significance for the earnings variable is driven primarily by the non-life and non-insurance business of the bancassurers.[36]

Table 5 reports the non-parametric and parametric results for the returns model equations – Basic Model 2 and Full Model 2. The results seem to further support the observations above. Both the change in achieved profits and the level of achieved profits appear to be highly positively associated with the market-adjusted returns. For the non-parametric tests, under both the Spearman rank and Kendall tau tests, the level of significance is at the 0.1% level for both samples. This high level of association does not appear to hold for the change in and level of earnings under MSSB since, although they are positively associated with returns, this is only at the 2% significance level.

The parametric tests results indicate a significant increase in explanatory power following the inclusion of the achieved profits, and the partial F-sta-

[32] The correlation between *MSSBK* and *IFLTB* is at the 0.734 level – this increases to 0.893 when the bancassurers are excluded from the sample, and both correlations are significant at the 0.1% level. *IFLTB* is more highly correlated with *MSSBK* than *APLFBT* and is negatively correlated with *MSSERN* after the exclusion of the bancassurers.

[33] Model 1 was re-specified with an additional multiplicative variable (*DUMBS* * *IFLTB*), where *DUMBS* is a dummy variable assigned the value of 1 if *IFLTB* was published in the main accounts and zero otherwise. The coefficient for *DUMBS*IFLTB* was 1.609 with a White t-statistic of 2.9764 which is significant at the 0.1% level and the coefficient for *IFLTB* was 1.96 with a White t-statistic of 6.9873 which is significant at the 0.1% level. Thus it appears that the value relevance of the *IFLTB* is not dependent on whether the information is published within the main accounts or as supplementary information. These results held true even after controlling for time and when re-run on only the pure insurance sample.

[34] This is a similar result to Kallapur and Kwan (2004:160) who found that brand values were positively correlated to market value despite incentives to overvalue them.

[35] This may reflect the fact that even the 'life insurers' have other business and other assets beyond those specifically attributable to their life insurance activities and the *MSSBK* captures all non-life net assets which do not suffer from the same accounting issues as the life part of the business. Similarly, it is true that the *MSSERN* captures non-life profits as well as those from life business: so it is interesting that *MSSERN* does lose significance when the 'realistic reporting' of life achieved profits is introduced, which may suggest that the *MSSBK* captures all the information needed for predicting what is expected to be only 'normal' profit achievable from the non-life net assets. However, this reduction in significance may simply be due to the high level of multicollinearity for this particular model.

[36] The models were rerun by replacing *MSSERN* with two new variables *MSSOPNL* and *MSSOPLF*. These new variables represent the MSSB operating profits for the non-life business (*MSSOPNL*) and for the life business (*MSSOPLF*), respectively. (Most companies did not disclose the segmentation of their *MSSERN* into life and non-life business therefore the segmentation of operating profit had to be used.) For the full sample *MSSOPNL* was found to be positive and significant at the 0.01% level whereas *MSSOPLF* while positive was not significantly different from zero. When the sample excluded the bancassurers the significance of *MSSOPNL* disappeared.

Table 5

Panel A: Measures of association with market-adjusted return: Pearson correlation coefficient, and non-parametric tests – Spearman rank correlation coefficient and Kendall tau correlation coefficient

		Full sample				*Life sample*			
		MSSERN	*ΔMSSERN*	*APLFBT*	*ΔAPLFBT*	*MSSERN*	*ΔMSSERN*	*APLFBT*	*ΔAPLFBT*
Pearson	*RTN*	0.40**	0.36**	0.55***	0.60***	0.46**	0.36*	0.55***	0.61***
On ranked data:									
Spearman	*RTN*	0.35*	0.43**	0.62***	0.69***	0.45**	0.44**	0.60***	0.68***
Kendall	*RTN*	0.25**	0.29**	0.45***	0.50***	0.33**	0.31**	0.42***	0.50***

Panel B: Test of value relevance of 'realistic reporting': partial F-statistic, coefficients values and t-statistics for the returns regression (White's t-statistics in parentheses)

$$RTN_{it+3mnths} = \alpha_0 + \beta_1 MSSERN_{it} + \beta_2 \Delta MSSERN_{it} + \varepsilon_{it} \quad \text{(Basic Model 2)}$$

$$RTN_{it+3mnths} = \alpha_0 + \beta_1 MSSERN_{it} + \beta_2 \Delta MSSERN_{it} + \beta_3 APLFBT_{it} + \beta_4 \Delta APLFBT_{it} + \varepsilon_{it} \quad \text{(Full Model 2)}$$

Variable	*Market-adjusted return*			
	Full Sample (n=41[a])		Life Sample (n=35[a] – Excl. Banks)	
	Basic Model	*Full Model*	*Basic Model*	*Full Model*
R^2 Adj	14.43%	40.66%	16.75%	41.73%
F-statistic	4.37**	7.85***	4.42**	7.09***
Partial F-statistic		9.40***		9.17***
Intercept	–0.012	–0.016	0.015	0.013
	(–0.16)	(–0.26)	(0.17)	(0.19)
MSSERN	0.004	0.001	**0.01**	0.002
	(1.47)	(0.51)	**(1.93)***	(0.86)
ΔMSSERN	0.002	0.001	0.001	0.0002
	(0.967)	(0.57)	(0.50)	(0.13)
APLFBT		**0.01**		**0.004**
		(3.83)***		**(2.30)****
ΔAPLFBT		**0.01**		**0.01**
		(2.91)***		**(2.83)*****

[a] = two firm-years had to be dropped from the model due to lack of disclosure of their comparative figures, also one outlier was excluded following the calculation of *DFBETA* in the whole sample; *, **, *** indicate significance at 5, 2 and 0.1% levels respectively (one-tailed for coefficients whose signs I predict); $RTN_{it+3mnths}$ = the 12-month compound daily market-adjusted return, beginning nine months prior to the accounting year end and ending the third month following the firm's accounting year end; *MSSERN* = net income valued on the modified statutory solvency basis; $\Delta MSSERN_{it}$ = the annual change in modified statutory income, i.e. $MSSERN_{it} - MSSERN_{it-1}$; *APLFBT* = achieved profits for the long-term business (before taxation); $\Delta APLFBT_{it}$ = the annual change in the achieved life profits (before tax), i.e. $APLFBT_{it} - APLFBT_{it-1}$.

Table 3
Estimated loss in purchasing power on the monetary aggregate M1 for the UK economy (£bn of 31 December 2005 dollars)

	Degree of interpolation				
Year	*First* \$bn	*Second* \$bn	*Third* \$bn	*Fourth* \$bn	*IAS 29* \$bn
1991	16.68	16.58	16.68	16.64	16.64
1992	5.94	5.92	5.95	5.94	5.85
1993	5.98	5.96	5.98	5.96	5.87
1994	5.40	5.36	5.39	5.37	5.22
1995	8.13	8.07	8.10	8.07	7.78
1996	6.82	6.78	6.83	6.82	6.67
1997	5.85	5.86	5.90	5.88	5.59
1998	5.95	5.90	5.99	5.98	5.76
1999	4.98	4.98	5.00	4.99	4.77
2000	3.70	3.70	3.74	3.73	3.45
2001	5.58	5.51	5.61	5.60	5.03
2002	9.23	9.20	9.24	9.23	9.25
2003	7.43	7.39	7.45	7.43	7.55
2004	10.91	10.90	10.95	10.92	10.72
2005	13.74	13.67	13.75	13.72	13.69

This table summarises annual estimates of the loss in purchasing power on the UK currency using the polynomial formulae, details of which are to be found in Table 1. The column headed 'first' estimates the purchasing power loss using the first-degree (linear) interpolation formula; the column headed 'second' estimates the purchasing power loss using the second-degree (quadratic) interpolation formula; the column headed 'third' estimates the purchasing power loss using the cubic interpolation formula; the column headed 'fourth' estimates the purchasing power loss using quartic interpolation. The column headed 'IAS 29' estimates the purchasing power loss using the procedures endorsed by IAS 29: *Financial Reporting in Hyperinflationary Economies*. Data for the monetary aggregate, M1, were downloaded from the Bank of England website while Consumer Price Index data were downloaded from the UK National Statistics Office website.

same as that for Table 2. Note how this table again shows that the four polynomial interpolation methods return almost identical estimates of the loss in purchasing power on the currency. However, when the IAS 29 procedures are applied to the UK data they return a lower estimate of the loss in purchasing power on the currency than is the case with the polynomial approximation methods in all but two years (2002 and 2003). This is in direct contrast to the US results, where the IAS 29 procedures consistently return higher estimates of the loss in purchasing power on the currency.

One might argue that the systematic differences observed in these two tables are of little consequence since the deviations between the annual estimates obtained under the IAS 29 procedures and the polynomial approximation techniques are relatively small. For the US data, estimates obtained using the polynomial approximation formulae vary by no more than 4% from estimates obtained under the IAS 29 procedures. For the UK data, there are two years (2000 and 2001) where differences in the estimates are in excess of 8%. In other years, however, the differences are generally much less than 5%. Here, one must remember however that these differences have arisen in what can only be described as modest inflationary environments. The average annual rate of inflation over the 15-year period ending 31 December 2005 was 2.6% for the US and a mere 2.1% for the UK. However, in the hyperinflationary environments envisaged by IAS 29 the cumulative rate of inflation over the previous three years will typically be of the order of 100% or more. It is questionable whether results obtained for the relatively low inflationary environments experienced in the US and UK can be replicated in the hyperinflationary environments envisaged by IAS 29. Given this, in the next section we use the data pertaining to 32 hyperinflationary economies and which between them encompass a wide variety of hyperinflationary environments covering a period of over eighty years, to make assessments about the relative efficiency of the procedures summarised in IAS 29 for estimating purchasing power gains and losses during hyperinflationary periods.

3. Data and empirical analysis

Our empirical analysis is based on the seven hyperinflations analysed by Cagan (1956) as well as a further 25 hyperinflationary economies for

Table 6
Descriptive statistics of segmental information on achieved profits and their measures of association with market-adjusted return for the life sample

Panel A: Descriptive statistics: median and range

Variable	Life sample	
	Median	*Range*
NB	5.21	37.39
IF	9.82	55.24
ERSHS	2.65	50.05
RES	–4.61	158.41
ΔNB	0.49	12.94
ΔIF	0.05	34.30
ΔERSHS	0.05	36.90
ΔRES	–4.18	233.86

Panel B: Measures of association: Pearson correlation coefficient, and non-parametric tests – Spearman rank correlation coefficient and Kendall tau correlation coefficient

		NB	*IF*	*ERSHS*	*RES*	*ΔNB*	*ΔIF*	*ΔERSHS*	*ΔRES*
Pearson	*RTN*	0.10	0.05	0.04	0.56***	0.32**	0.22*	0.13	0.53***
Rank data									
Spearman	*RTN*	0.05	0.02	0.05	0.76***	0.64**	0.31*	0.18	0.74***
Kendall tau	*RTN*	0.02	0.01	0.06	0.58***	0.43**	0.23*	0.16	0.63***

*, **, *** indicate significance at 5, 2 and 0.1% levels respectively.
RTN = is the 12-month compound daily market-adjusted return, beginning nine months prior to the fiscal year end and ending the third month following the firm's fiscal year end;
NB = contribution from new life insurance business for the year;
IF = contribution from in-force life insurance business for the year;
ERSHS = expected return on shareholder's net worth for the year;
RES = residual amount from *APLFBT* after deducting *NB*, *IF* and *ERSHS*;
ΔNB = the annual change in the contribution from new life insurance business, i.e. $NB_{it} - NB_{it-1}$;
ΔIF = the annual change in the contribution from in-force life insurance business, i.e. $IF_{it} - IF_{it-1}$;
$\Delta ERSHS$ = the annual change in the expected return on shareholder's net worth per-share, i.e. $ERSHS_{it} - ERSHS_{it-1}$;
ΔRES = the annual change in the residual amount calculated above, i.e. $RES_{it} - RES_{it-1}$.

cremental value relevance over the GAAP accounts. What are the implications of these results for standard-setters, especially the IASB as it progresses with Phase II of its insurance project, and for the insurance industry as a whole, home and overseas? Clearly, this 'realistic reporting' should continue: but should it now be incorporated into the main accounts? Barth et al. (2001) argue that value relevance studies can assist standard-setters by providing evidence on value *relevance* but that it is not possible to draw specific policy conclusions because of the trade-off between reliability and relevance. Holthausen and Watts (2001) and Watts (2003) also note that accounting standards are shaped by factors other than simply what is valuable for investors in terms of pricing.

> 'Without descriptive theories to interpret the empirical associations the value-relevance literature's associations have limited implications or inferences for standard setting; they are just associations... Those inferences are not likely to be useful if the evidence suggests standard setters do not consider stock valuation association an important attribute.' (Holthausen and Watts, 2001: p.4)

However, given the FASB/IASB objective to provide information useful to investors (e.g. IASB, 2006) 'value relevance' studies give at least a *prima facie* indication of what information investors actually use.

Other major users are creditors (e.g. IASB, 2006). In the insurance context the primary long-term creditors are policyholders, whose protection is generally the responsibility of statutorily appointed regulators. What information do the current GAAP reports provide to investors and creditors/regulators? While rejecting (at least for now) embedded values – even though they provide the information that is most valued by analysts (Horton and Macve, 1997) – the ASB's (2004) FRS 27 *Life Insurance* comments (Appendix 4 Para. 7.4):

> 'Existing insurance accounting focuses more on the needs of prudential regulation than on the information needs of investors. As a result, the true and fair financial statements are not very good at providing shareholders with useful information about the value of their interests in the business.'[38]

But in the UK (unlike in continental Europe) the MSSB accounts are not in fact the basis for solvency regulation. As ASB (2004) also explains, the unmodified statutory solvency basis (SSB) – and now 'twin peaks' – returns to the FSA are. So it is not at all clear what, if any, purpose the MSSB accounts serve other than legal compliance with the EU IAD. It has been noted that for countries where there is not a separation between the solvency regulatory accounts and the GAAP accounts, regulators are discussing the possibility of increasing the regulatory margins for accounts based on less conservative bases (whether that be EEV or fair value accounting (IAS 39)), relative to their current margins based on the IAD etc. However, the IASB Phase II discussions have made clear that IASB is not directly interested in regulatory solvency and it is not a primary objective of general purpose accounts to aid the regulators in this regard.

So, if the focus is on investors, what should the objectives of the GAAP accounts be? Three major objectives of insurers' financial reporting can be identified (e.g. Horton and Macve, 1995): signalling expectations to investors to assist shareholders (and, where relevant policyholders) in appraising the company's financial position, performance and prospects; establishing property rights (e.g. policyholder bonuses, dividends, taxation, management bonuses and other contractual purposes); and regulatory (monitoring solvency etc.). Apart from management bonuses, the property rights and regulatory objectives can be adequately dealt with by the separate regulatory returns which UK insurers have to provide to the FSA and publish annually and which distinguish them from 'ordinary' companies where the Companies Act accounts must also serve these other purposes. So for insurers, the Companies Act GAAP accounts can focus on giving a true and fair view[39] for the purposes of the signalling objective, which implies that, in determining what may be included in the primary financial statements, relevance can be given a greater emphasis over reliability than is conventional in accounting for other enterprises. This means that companies wishing to incorporate a basis such as the 'achieved' profits basis into their main financial statements (as several bancassurers still do and as

[38] At para. 7.8 it adds that it was decided not to prohibit embedded value for those entities currently using it in their main financial statements as it would mean forcing them 'back onto a basis of accounting that the Board has acknowledged is very unsatisfactory – the MSSB basis (albeit modified by the FRS)'. However, a representative of the International Association of Insurance Supervisors ('IAIS') is an observer on the IASB's insurance working group http://www.iasb.org/About+Us/About+Working+Groups/Insurance.htm.

[39] Horton and Macve (1995) note that 'true and fair' is a dynamic concept whose meaning evolves over time as ideas and practices change. They distinguish two major meanings of 'true and fair': 'true and fair (actual)' and 'true and fair (ideal)'. 'True and fair (actual)' is a 'legal term of art reflecting only what a court would regard as an acceptable basis of accounting in the light of current statutory requirements and accounting standards taken together with established practice.' By contrast, 'true and fair (ideal)' reflects 'desirable developments in accounting practice towards more realistic representation of financial performance and position.' On this basis it can be argued that the MSSB basis can be used in 'true and fair (actual)' accounts.

some standalone insurers had already started to do before the ABI/ASB ban) may indeed legitimately do so; which in turn may raise questions about the bases on which other financial institutions prepare their accounts. In other words, insurance companies' solvency may be taken to be strong enough, given the FSA requirements, that users can be confident that the insurer has passed this 'hygiene factor' and as such the accounts should focus on providing information that is relevant to investors – such as the 'realistic' reporting currently supplied in the supplementary disclosures.

Would the current accounting frameworks allow the EV to be recognised in the primary accounts? The IASB's (1989) *Framework* states that published financial statements are:

> '...based on the information used by management about the financial position, performance and changes in financial position of the entity'. (para 1)

also

> 'An essential quality of information provided in financial statements is that it is readily understandable by users.' (para 25)

and

> '...to be useful, information must be relevant to the decision making needs of the user'. (para 26).

Under these criteria, it would appear that EV would be suitable for use as a measurement basis in the balance sheet, as it is designed to communicate value creation/destruction (rather than the legal ability to pay dividends) and better to reflect economic reality, in particular the effect of management decisions. However, whether the IASB itself would accept the greater emphasis on relevance rather than reliability remains questionable.[40] If it does not do so, there is clearly an increasing danger that the main 'GAAP' accounts will be sidelined as merely formal, ritualistic and largely irrelevant, unless the opportunity is now taken to argue for a more flexible and informative approach. This would bring about the situation feared by Todd Johnson, as expressed in the quotation at the start of this paper.

However, there is some risk that mandatory standardisation within the main accounts might *reduce* the value relevance of the information relative to the present regime of essentially voluntary disclosure. The dangers of information loss through standardisation and uniform prescription are illustrated by the findings of previous studies regarding the irrelevance of the standardised oil and gas company disclosures in the US under SFAS 69's 'reserve recognition accounting' (e.g. Dharan, 1984). There may also be a risk that, once institutionalised as the primary focus of reporting, incentives to manage these earnings results may intensify and, given the long run uncertainties involved in the estimates that have to be made in life insurance, might not be wholly contained by the discipline of audit.

Holthausen and Watts (2001:29) note:

> 'An accounting number that is value relevant in a study before it becomes part of GAAP could well cease to be value relevant after it becomes part of GAAP if it is not verifiable...Such estimates or disclosures, even if produced by management prior to their forced recognition, could be relatively free from bias and noise because managers' incentives to bias and include measurement error are not as strong.'

These issues are beyond the scope of this paper. However, this study has offered evidence in support of the anecdotal consensus that EV disclosures are relevant to investors. Value relevance studies such as this can in this way provide useful input to evidence-based policy making for accounting standard-setting.

[40] The latest update on Phase II of the IASB's insurance project is available at www.iasb.org.uk.

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